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“जानने का अधिकार, जीने का अधिकार”

Mazdoor Kisan Shakti Sangathan

“The Right to Information, The Right to Live”

“पुराने को छोड़ नये के तरफ”

Jawaharlal Nehru

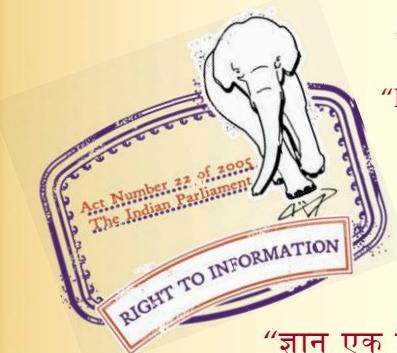
“Step Out From the Old to the New”

IS 9065 (1979): Aluminium hammers [PGD 6: Earth, Metal And Wood Working Hand Tools]

“ज्ञान से एक नये भारत का निर्माण”

Satyanaaran Gangaram Pitroda

“Invent a New India Using Knowledge”



“ज्ञान एक ऐसा खजाना है जो कभी चुराया नहीं जा सकता है”

Bhartṛhari—Nītiśatakam

“Knowledge is such a treasure which cannot be stolen”



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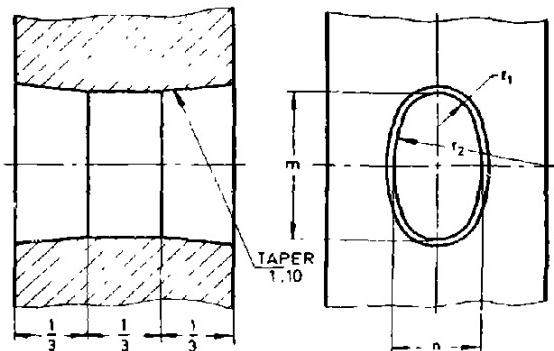


Indian Standard
**SPECIFICATION FOR
ALUMINIUM HAMMERS**

1. Scope — Covers requirements for aluminium hammers.

2. Dimensions

2.1 Eye

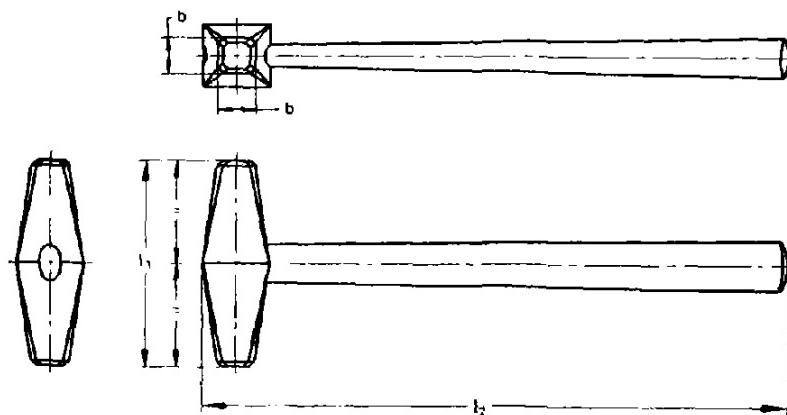


All dimensions in millimetres.

Sizes <i>m × n</i>	Tolerances		<i>r</i> ₁	<i>r</i> ₂
	<i>m</i>	<i>n</i>		
16 × 9.0	± 0.2	± 0.1	3.7	16.0
18 × 10.0	± 0.3	± 0.2	4.1	18.0
20 × 11.2	± 0.3	± 0.2	4.6	20.0
25 × 14.0	± 0.4	± 0.2	5.8	25.0
30 × 17.0	± 0.5	± 0.3	7.1	30.0
31.5 × 18.0	± 0.5	± 0.3	7.6	31.5

2.2 Hammers

2.2.1 Type A



All dimensions in millimetres.

Nominal Mass		b Approx	l_1 Approx	l_2	Eye Sizes*
g	Tolerance g				
100	± 5	16	90	260	16 x 9
150	± 8	18	105	280	18 x 10

Note — The mass of handle is not included in the mass of the hammer.
*See 2.1.

AMENDMENT NO. 1 MAY 1996
TO
IS 9065 : 1979 SPECIFICATION FOR
ALUMINIUM HAMMERS

(*Page 4, clause 2.4, line 2*) — Substitute 'IS 2102 (Part 1) : 1993 General tolerances : Part 1 Tolerances for linear and angular dimensions without individual tolerance indications (*third revision*)' for 'IS : 2102 (Part 1) - 1980 General tolerances for dimensions and form and position : Part 1 General tolerances for linear and angular dimensions (*second revision*)'.

(*Page 4, clause 3.1, line 1*) — Substitute 'IS 617 : 1975 Aluminium and aluminium alloy ingots and casting (*second revision*)' for 'IS : 617 - 1959 Specification for aluminium and aluminium alloy ingots and casting for general engineering purposes (*revised*)'.

(*Page 4, clause 3.2, line 1*) — Substitute 'IS 620 : 1985 Wooden tool handles — General requirements (*fourth revision*)' for 'IS : 620 - 1975 Specification for general requirements for wooden tool handles (*third revision*)'.

(*Page 5, clause 6.1, line 1*) — Substitute 'IS 620 : 1985' for 'IS : 620 - 1975'.

(*Page 5, clause 7, line 2*) — Substitute 'IS 2500 (Part 1) : 1992 Sampling inspection procedures : Part 1 Attribute sampling plans indexed by acceptable quality level (AQL) for lot-by-lot inspection (*second revision*)' for 'IS : 2500 (Part 1) - 1973 Sampling inspection tables : Part 1 Inspection by attributes and by count of defects (*first revision*)'.

(*Page 5, clauses 7.1 and 7.2, line 2*) — Substitute 'Tables I and II-A of IS 2500 (Part 1) : 1992' for 'Tables 1 and 2 of IS : 2500 (Part 1) - 1973'.

(*Page 5, foot-notes*) — Substitute the following for the existing:

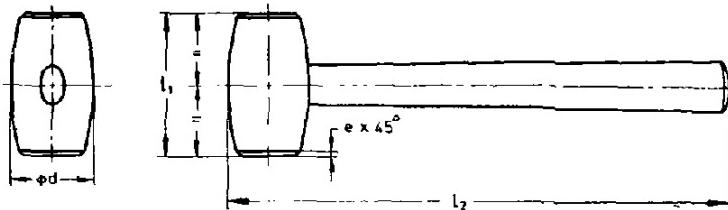
*See IS 1501 (Part 1) - 1984 'Method for Vickers hardness test for metallic materials. Part 1 HV5 to HV100 (*second revision*)'.

†See IS 1500 - 1983 'Method for Brinell hardness test for metallic materials (*second revision*)'

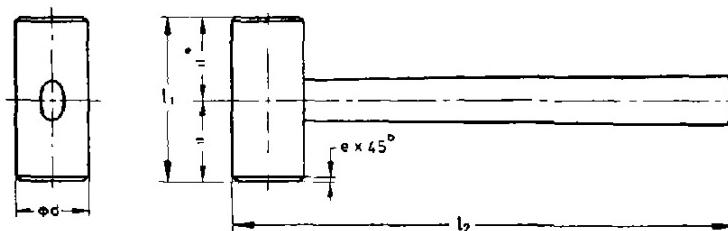
(PE 06)

Reprography Unit, BIS, New Delhi, India

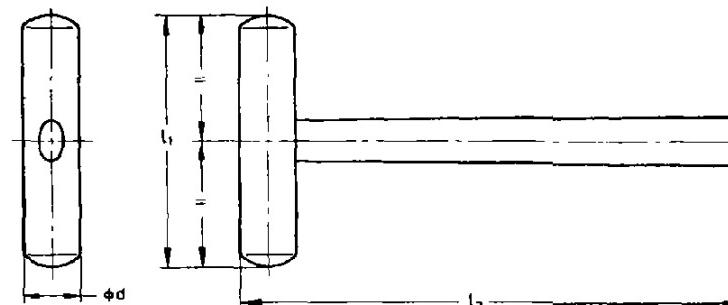
2.2.2 Type B, C and D



TYPE B



TYPE C



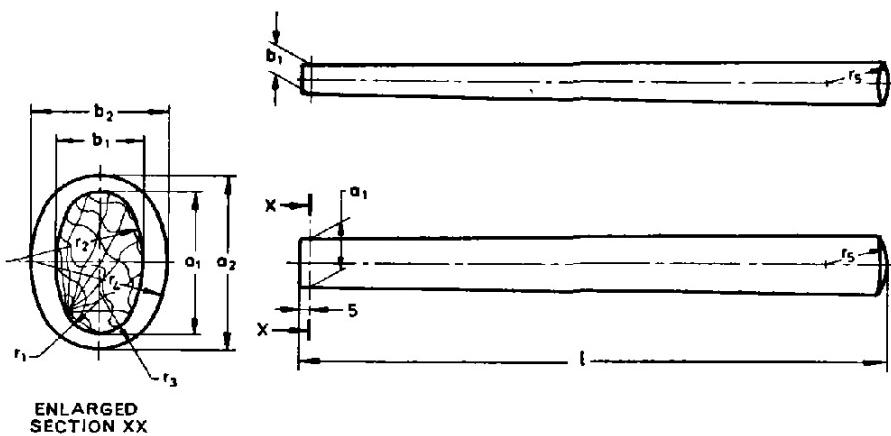
TYPE D

All dimensions in millimetres.

Nominal Mass		Type B		Type C		Type D		e Approx	l_2	Eye Sizes*
g	Tolerance g	d Approx	l_1 Approx	d Approx	l_1 Approx	d Approx	l_1 Approx			
250	± 13	40	80	40	80	—	—	1.5	300	20.0 × 11.2
500	± 25	52	95	45	110	35	170	2.0	320	25.0 × 14.0
1 000	± 50	64	125	60	130	—	—	2.0	360	30.0 × 17.0
1 500	± 75	72	150	70	145	—	—	3.0	380	31.5 × 18.0

Note — The mass of handle is not included in the mass of the hammers.
*See 2.1.

2.3 Handles



All dimensions in millimetres.

<i>l</i>	<i>a</i> ₁	Tol on <i>a</i> ₁	<i>a</i> ₂	<i>b</i> ₁	Tol on <i>b</i> ₁	<i>b</i> ₂	<i>r</i> ₁	<i>r</i> ₂	<i>r</i> ₃	<i>r</i> ₄	Eye Sizes*
260±8	16.5	+0.8 -0.5	23	8.5	+0.5 -0.3	16	4.0	16.0	6.9	17.0	16.0×9.0
280±8	18.7	+0.9 -0.6	25	10.7	+0.5 -0.3	19	4.3	17.0	8.5	17.0	18.0×10.0
300±9	20.8	+0.8 -0.4	28	12.0	+0.6 -0.4	20	4.9	19.0	8.4	19.0	20.0×11.2
320±10	25.9	+1 -0.5	33	14.9	+0.7 -0.4	23	6.1	24.0	9.3	22.0	25.0×14.0
360±11	31.2	+1.3 -0.6	38	18.2	+0.9 -0.5	28	7.3	27.5	12.5	27.5	30.0×17.0
380±11	32.9	+1.3 -0.7	39	19.4	+1 -0.6	29	7.7	28.0	13.1	28.0	31.5×18.0

Note — The values of *r*₅ shall be equal to the values of *a*₂.

*See 2.1.

2.4 With reference to hammer width, the longitudinal axis of the eye shall coincide with the centre axis of the hammer as per class of deviation 'extra coarse' of IS:2102-1969 'Allowable deviations for dimensions without specified tolerances (first revision)'.

2.5 The illustrations are diagrammatic only and are not intended to illustrate the details of design.

3. Material

3.1 Hammer Heads — Shall conform to IS:617-1959 'Specification for aluminium and aluminium alloy ingots and castings for general engineering purposes (revised)'.

3.2 Handles shall conform to class 3 of IS:620-1975 'Specification for general requirements for wooden tool handles (third revision)'.

4. Hardness

Type A — 66 to 81 HV10* (≈ 63 to 77 HB	5/250/30†)
Type B — 22 to 31 HV10* (≈ 21 to 29 HB	5/250/30†), called HR1
or	
32 to 42 HV10* (≈ 30 to 40 HB	5/250/30†), called HR2
or	
66 to 81 HV10* (≈ 63 to 77 HB	5/250/30†), called HR3
Type C — 105 to 125 HV10* (≈ 100 to 120 HB	5/250/30†)
Type D — 125 to 147 HV10* (≈ 120 to 140 HB	5/250/30†)

Note — The choice of hardness range of Type B shall be subject to agreement between manufacturer and user.

5. Manufacture, Workmanship and Finish

5.1 The hammer heads shall be well shaped and free from burrs, cracks, roughness and other defects. The sharp edges of the eye shall be suitably chamfered.

5.2 The hammer heads shall either be made from rolled material or forged so as to obtain the required hardness as given in 4. The hammer head shall be given suitable protective coatings and shall be finished smooth and bright all over.

6. Requirements

6.1 The handles shall conform to class 3 of IS : 620-1975.

6.2 The handles shall be perpendicular to the centre axis of the hammer head within a permissible deviation of 8 mm over 350 mm length.

6.3 The handles shall be properly wedged.

6.4 The hammers may also be supplied without handles subject to agreement between the purchaser and the supplier.

7. Sampling — Unless otherwise agreed to between the supplier and the purchaser the procedure given in IS : 2500 (Part I)-1973 'Sampling inspection tables: Part I Inspection by attributes and by count of defects (first revision)' shall be followed for sampling inspection. For various characteristics the sampling plan as given in 7.1 and 7.2 shall be followed.

7.1 For inspection for dimensions and workmanship and finish the sampling plan with inspection level III and acceptable quality level (AQL) 2.5 percent given in Tables 1 and 2 of IS : 2500 (Part I)-1973 shall be followed.

7.2 For testing hardness, the sampling plan with inspection level I and acceptable quality level (AQL) 2.5 percent given in Tables 1 and 2 of IS : 2500 (Part I)-1973 shall be followed.

8. Designation

8.1 A hammer of Type A having nominal mass 100 g when supplied without handle shall be designated as:

Aluminium hammer 100, IS : 9065

8.2 A hammer of Type B of nominal mass 250 g having hardness range HR2 when supplied with handle shall be designated as:

Aluminium hammer H250 — HR2, IS : 9065

*See IS : 1810-1961 'Method for Vickers hardness test for light metals and their alloys'.

†See IS : 1790-1961 'Method for Brinell hardness test for light metals and their alloys'.

IS : 9065 - 1978

9. Marking — The hammers shall be marked with type, mass, manufacturer's name, initials and/or recognized trade-mark. For type B hammers the hardness range shall also be marked.

9.1 ISI Certification Marking — Details available with the Indian Standards Institution.

EXPLANATORY NOTE

While preparing this standard assistance has been derived from DIN 1195-1966 'Eye dimensions for hammers and forging tools', DIN 5111-1968 'Shafts for hammers up to 2 kg' and DIN 6491-1972 'Leichtmetallammer (Aluminium hammers)' issued by (DIN) Deutsches Institut für Normung.